

The Taxonomy of Some Neotropical *Hylaeus* and Descriptions of New Taxa (Hymenoptera: Colletidae)

Roy R. Snelling

Abstract.—The taxonomy of some neotropical *Hylaeus* and descriptions of new taxa (Hymenoptera: Colletidae) by Roy R. Snelling. *Bull. Southern California Acad. Sci.*, 81(1):1-25, 1982. All previously described *Hylaeus* from Mexico and Central America are placed within existing subgenera and some new synonymies are proposed. The following species are placed in the subgenus *Prosopis*: *H. aztecus* and *H. transvittatus*. Species placed in the subgenus *Hylaeopsis* are: *H. callosulus* (= *H. callosa* = *H. monacha*), *H. dubiosus*, *H. gracillimus* (= *H. gracillinea*), *H. grossus* (= *H. maculata*), *H. gualanicus* (= *H. ruficollis* = *H. albi-frontella*), *H. maculipennis*, *H. maculosus*, *H. mexicanus*, *H. opaciventris*, *H. subgriseus*, *H. titanius*, *H. vigilans* (= *H. trepandus*) and *H. zamoranicus*. The following are assigned to the subgenus *Hylaeana*: *H. costaricensis*, *H. knabi*, *H. panamensis* (= *H. aztecus* of previous authors), *H. quadratiferus*, *H. rufoclypeatus* and *H. trivittatus*. *Prosopis crenulata* and *P. howardiella*, both described as hylaeines, are an andrenid and colletid, respectively.

Four new species in the subgenus *Hylaeana* are described from Jamaica, French Guiana and Trinidad. A new subgenus is described to accommodate *H. cruentus*, *H. orbicus* and a new species from Bolivia.

Introduction

Up to the present time, about two dozen species of *Hylaeus* have been described and recorded from Central America. The first of these were named by F. Smith. Subsequently, others were added by Cresson, Cockerell, Friese, and Michener. Most of these have been known only from the descriptions and the appropriate type specimens.

I have been able to examine most of the types. Notes on those described by F. Smith were provided for me, and I am now able to assign each species to a subgeneric category and to propose some synonymy. More detailed treatment of these and other Mesoamerican *Hylaeus* must remain for a future paper.

The opportunity is taken to describe a few new species so that their names may be made available to other researchers.

Terminology

For the most part, morphological terminology used herein is that of my earlier papers on *Hylaeus* (e.g., Snelling 1966b, 1970a). In the latter paper, I suggested a tentative terminology for puncture sizes; it has since proven unsatisfactory, and a new system is here proposed:

Ultraminate—average diameter less than 0.010 mm.

Minute—puncture diameter 0.010-0.019 mm.

Fine—puncture diameter 0.020–0.035 mm.

Moderate—puncture diameter 0.036–0.055 mm.

Coarse—puncture diameter 0.056–0.070 mm.

Very coarse—puncture diameter over 0.070 mm.

Similarly, a system for expressing degree of closeness of punctures was developed:

Contiguous—punctures crowded, often deformed, interspaces sharp-edged. At its extremes, this may be termed rugosopunctate or reticulopunctate when punctures no longer have the appearance of punctures.

Subcontiguous—interspaces more or less flat-topped, interval between them up to about 0.25 times a puncture diameter.

Dense—more or less flat-topped interspaces, averaging about 0.3–0.7 times a puncture diameter.

Close—intervals between punctures averaging between 0.7–1.5 times a puncture diameter.

Sparse—intervals between punctures averaging between 1.5–3.0 times a puncture diameter.

Scattered—intervals between punctures greater than 3.0 times a puncture diameter.

Puncture size and density, on a given segment, often vary and an appropriate combination of the above terms can be used to express such diversity.

Some descriptive terms have been abbreviated as follows:

ASD—Antennal socket diameter. The maximum diameter, between outer margins, perpendicular to the longitudinal axis of the head.

BCW—Basal clypeal width. The distance between the subantennal sutures along the basal margin of the clypeus.

COD—Clypeocular distance. Distance from laterobasal angle to nearest point on eye margin.

CL—Clypeal length. The maximum length of the clypeus, from basal margin to its anteriormost extremity.

CW—Clypeal width. The maximum width of the clypeus near its lowermost point.

FSW—Frontal shield width. The width of the frontal shield at its upper termination on the frons.

HL—Head length. Maximum length between highest point of the vertex and lowermost extremity of the clypeus.

HW—Head width. Maximum width of the head, across the eyes.

IAD—Interantennal distance. The minimum distance between the antennal sockets.

LFW—Lower facial width. The minimum distance between the eyes at their lower end. This term is utilized in its relationship with UFW (q.v.) to express degree of convergence of the inner eye margins: *weakly convergent*—UFW 1.01–1.29 times LFW; *moderately convergent*—UFW 1.30–1.49 times LFW; *strongly convergent*—UFW 1.50–1.70 times LFW; *very strongly convergent*—UFW more than 1.70 times LFW.

OD—Ocellar diameter. Transverse diameter of anterior ocellus.

SL—Scape length. The usual method, length of scape shaft, exclusive of basal condyle.

TL—Total length. This is the least satisfactory of the measurements used; it is certainly the least exact. The method used here differs from the conventional but seems less subject to the vagaries resulting from wide variations in death posture of the specimen. TL is the sum of the following: HL + thoracic length (in dorsal view, from anterior margin of pronotal collar to posterior extremity of propodeum) + length of first tergum (dorsal view, along midline with the summit of the anterior or basal face just occluding the basal attachment) + length of second tergum (along midline, from gradulus to apical margin).

UFW—Upper facial width. The minimum distance between the upper ends of the eyes, at about the level of the anterior ocellus, not at a point of greatest width as Houston (1975) has it; consistent with my use of the term in earlier papers (e.g., 1970).

WL—Wing length. The length of the anterior wing from margin of tegula to apical extremity.

The specimens examined are in the collections of the American Museum of Natural History (AMNH), the Museum of Comparative Zoology (MCZ), the Natural History Museum of Los Angeles County (LACM), and the University of Kansas (UKAN).

Previously Described Species

Of the 27 names previously ascribed to the hylaeine fauna of Central America, 25 are placed in their respective subgenera in the following list; 2 are non-hylaeines and are treated in the following section. Most names are new combinations within those subgenera. New synonymy proposed below is based on a study of the relevant types.

There are numerous undescribed species in Central America, but an effort to describe these would be premature.

Subgenus *Prosopis* Fabricius

Prosopis Fabricius 1804:293. Type species. *Sphex signata* Panzer 1798 = *Mellinus bipunctatus* Fabricius 1804; designation of Morice and Durant 1914. *aztecus* (Cresson). Mexico.

Prosopis azteca Cresson 1869:272. ♀.

transvittatus (Cockerell). Mexico; southeastern Arizona.

Prosopis transvittata Cockerell 1917:437–438. ♂ ♀.

Hylaeus (*Prosopis*) *transvittatus*: Snelling 1966a:2, 3, 16. ♂ ♀.

Subgenus *Hylaeopsis* Michener

Hylaeus, subg. *Hylaeopsis* Michener, 1954:27. Type species: *Prosopis mexicana* Cresson 1869; original designation.

callosulus Friese. Costa Rica

Prosopis callosa Friese 1921:82. ♀. Preoccupied.

Hylaeus callosulus Friese, in Meade-Waldo 1923:31. New name.

Prosopis monacha Warncke 1970:747. New name, NEW SYNONYMY.

dubiosus (Cresson). Mexico.

Prosopis dubiosa Cresson 1869:272. ♂.

gracillimus (Schrottky). Brazil; Panama.

Prosopis gracillinea Schrottky 1903:340; pl. 2, fig. 1. ♀. Schrottky 1906:16.

Prosopis gracillima Schrottky 1906:16. (emend.)

Hylaeus gracillimus Michener 1954:27–28. ♀.

grossus (Cresson). Mexico; Costa Rica.

Prosopis grossa Cresson 1869:273. ♂.

Prosopis maculata Friese 1921:81. ♂. NEW SYNONYMY.

gualanicus (Cockerell). Guatemala; Costa Rica; Honduras.

Prosopis gualanica Cockerell 1912:565. ♂.

Prosopis ruficollis Friese 1921:82. ♂. NEW SYNONYMY.

Prosopis albifrontella Cockerell 1949:432. ♂. NEW SYNONYMY.

maculipennis (F. Smith). Mexico.

Prosopis maculipennis F. Smith 1879:23. ♂.

maculosus Friese. Costa Rica.

Prosopis trivittata var. *maculosa* Friese 1921:81. ♀.

mexicanus (Cresson). Mexico.

Prosopis mexicana Cresson 1869:272. ♀ only, not ♂.

Hylaeus (Hylaeopsis) mexicana: Michener 1954:27.

opaciventris (Friese). Costa Rica.

Prosopis opaciventris Friese 1925:2. ♂ ♀.

subgriseus (Cockerell). Mexico.

Prosopis subgrisea Cockerell 1918:424. ♀.

titanius (Friese). Costa Rica.

Prosopis titania Friese 1925:2. ♀.

vigilans (F. Smith). Mexico.

Prosopis vigilans F. Smith 1879:22. ♀.

Prosopis trepanda F. Smith 1879:23. ♀.

Hylaeus trepandus: Moure 1960:64, 66. ♀. Note: Moure (1960) correctly observed that *vigilans* and *trepanda* were conspecific. He chose to use the latter name, even though *vigilans* has strict page priority. My preference is to use *vigilans* not only because of page priority but also because the type of *trepanda* lacks the abdomen.

zamoranicus (Cockerell). Honduras.

Prosopis zamoranica Cockerell 1949:433. ♂.

Subgenus *Hylaeana* Michener

Hylaeus, subg. *Hylaeana* Michener 1954:28. Type species: *Hylaeus panamensis*

Michener 1954, original designation.

costaricensis (Friese). Costa Rica.

Prosopis costaricensis Friese 1916:301. ♂.

knabi (Cockerell). Guatemala; Mexico.

Prosopis knabi Cockerell 1918:425. ♂.

panamensis Michener. Panama to southwestern United States.

Hylaeus aztecus: Cockerell 1924:530. Misidentification.

Hylaeus panamensis Michener 1954:28–30. ♂.

Hylaeus (Hylaeana) aztecus: Snelling 1968:4; figs. 2, 3. ♂ ♀. Misidentification.

Hylaeus (Hylaeana) panamensis: Snelling 1975:8.

quadriferus (Cockerell). Guatemala.

Prosopis quadratifera Cockerell 1912:566. ♂.
rufoclypeatus (Friese). Costa Rica.

Prosopis rufoclypeata Friese 1916:301. ♀ ♂.
trivittatus (Friese). Costa Rica.

Prosopis trivittata Friese 1921:81. ♀.

Species Incorrectly Described as *Prosopis*

Prosopis crenulata Cockerell 1905:200. ♂. Described from Medellín, Vera Cruz, Mexico. Placed in *Panurginus* by Cockerell 1941:510. According to Timberlake (1973:17), this is a *Pseudopanurgus* (Andrenidae, Panurginae).

Prosopis howardiella Cockerell 1918:423. ♂. Described from Oaxaca, Mexico. According to Snelling (1970b), this is a synonym of *Chilicola ashmeadi* (Crawford) (Colletidae, Xeromelissinae).

Descriptions of New Taxa

In the descriptions that follow, when a range is indicated for a given measurement, the figure in parentheses is the measurement for the holotype (or allotype, if appropriate).

Hylaeus (Hylaeana) rawi new species

Figures 1, 4–7

Diagnosis: Separable from known *Hylaeana* species by the following combined characteristics. Basal area of propodeum not rugulose; metapleuron discretely punctate. *Male*: supraclypeal mark absent or minute; FSW less than ASD; scape yellow beneath. *Female*: upper end of facial fovea well removed from eye margin; clypeus ferruginous; first tergum without apicolateral fringe.

Description: *Male, measurements (mm)*: HL 1.03–1.10 (1.05); HW 1.03–1.10 (1.07); WL 2.4–2.6 (2.5); TL 3.2–3.5 (3.3).

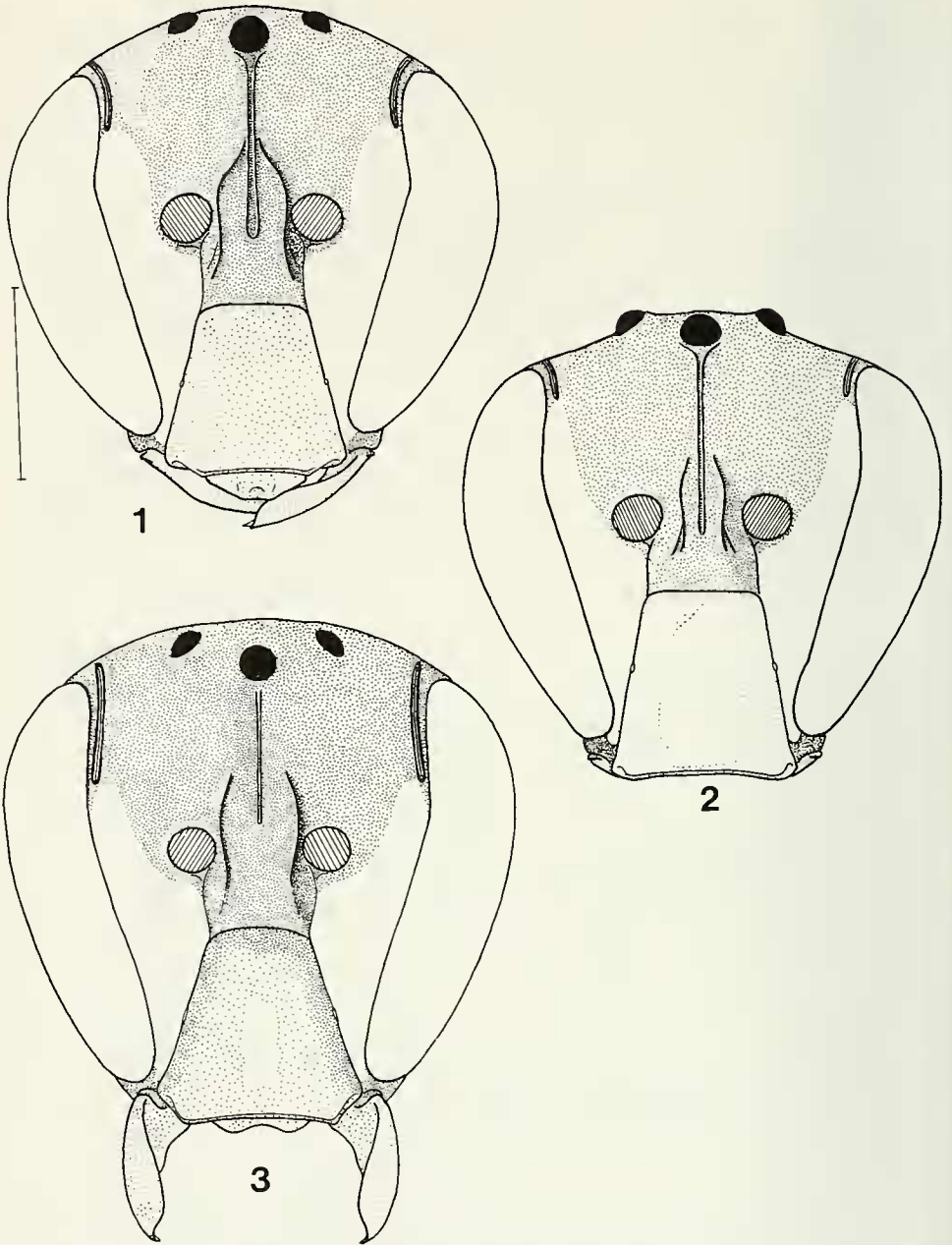
Head.—Moderately broad, HW 1.00–1.03 (1.02) × HL. Scape quite short, SL 0.19–0.21 (0.19) × HL; stout, SL 1.78–2.00 (1.89) × SW; first two flagellar segments much broader than long, first shorter than second; third segment a little longer than second, subequal to pedicel. Eyes very strongly convergent below, UFW 1.80–2.07 (2.07) × LFW.

Clypeus narrow, CW 0.79–0.80 (0.79) × CL; BCW 0.46–0.48 (0.46) × CW, 0.80–0.87 (0.80) × 1AD, 1.20–1.44 (1.20) × ASD, 0.92–0.93 (0.92) × COD. Frontal shield about twice longer than wide, apex narrow, FSW 0.70–0.80 (0.80) × ASD. Interocellar distance about 1.5 × OD, distinctly greater than ocellocular distance.

Clypeus and supraclypeal area slightly shiny between close to sparse, fine punctures; maculate side of face similar, but punctures dense to close; frontal shield on either side with a row of fine, contiguous punctures, otherwise longitudinally microlineolate with occasional ultraminate punctures; face and vertex moderately shiny between fine, contiguous to subcontiguous punctures; gena moderately shiny, microlineolate between subcontiguous to dense, minute to fine punctures.

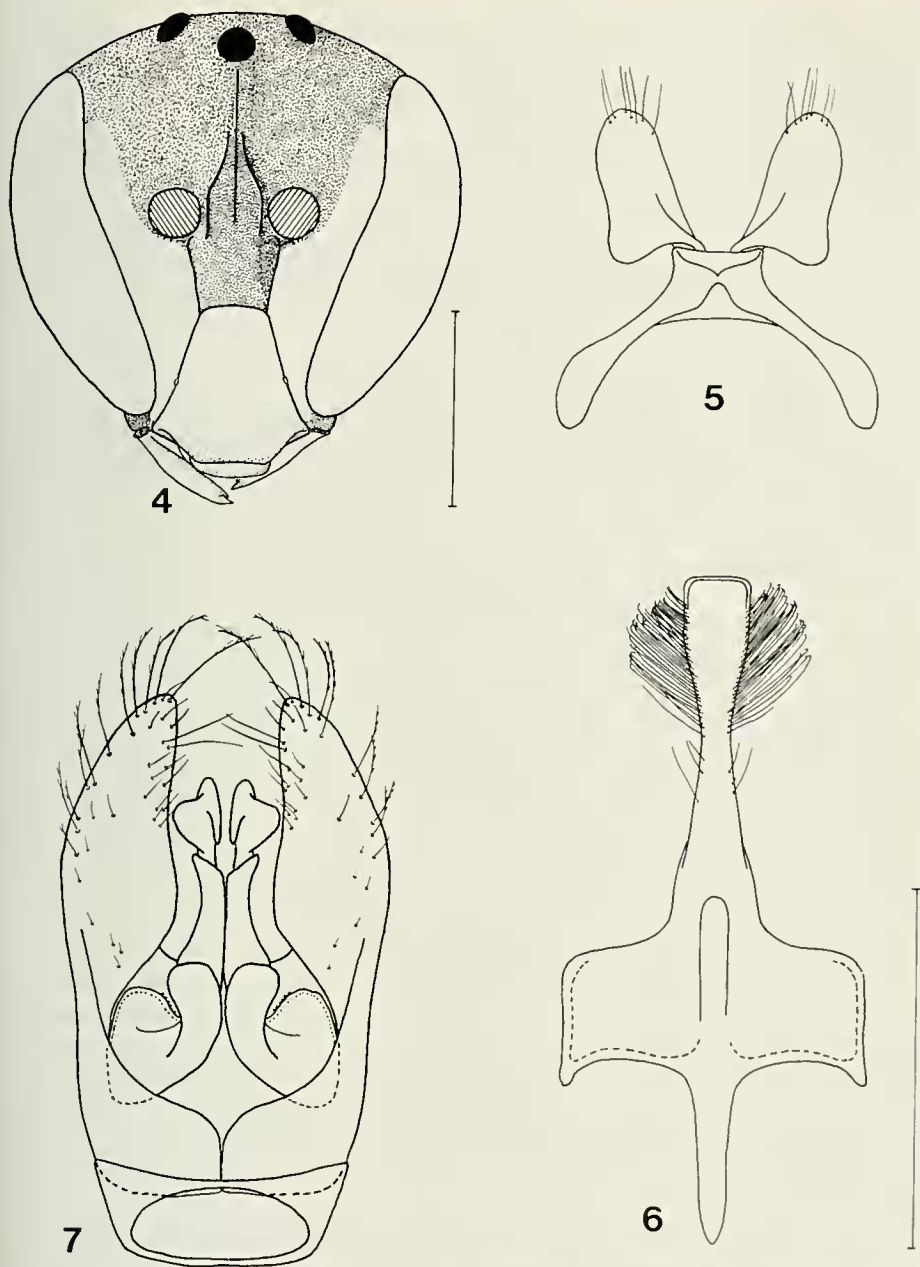
Thorax.—Mesoscutum 1.3–1.4 times wider than long; scutellum flattened, about 0.4 times length of mesoscutum; metanotum flattened.

Mesoscutum moderately shiny between dense, fine punctures; scutellum mod-



Figs. 1-3. *Hylaean* (*Hylaean*) spp., frontal view of female heads: 1, *H. rawi*; 2, *H. extrinsecus*; 3, *H. dictyotus*. Scale line = 0.50 mm.

erately shiny, punctures fine and quite variably spaced, from subcontiguous to sparse; metanotum slightly shiny between minute to fine, subcontiguous to dense punctures; mesopleuron moderately shiny between dense, fine punctures, meta-pleuron moderately shiny between subcontiguous to dense punctures. Side, disc,



Figs. 4-7. *Hylaeus (Hylaeana) rawi*, male; 4, frontal view of head; scale line = 0.50 mm. 5, sternum eight; 6, sternum nine; 7, genitalic capsule, ventral view; scale line = 0.25 mm.

and stigmal area of propodeum moderately shiny to shiny between subcontiguous to dense, fine punctures; basal area moderately shiny and with scattered minute punctures.

Abdomen.—Disc of first tergum moderately shiny, transversely microlineate, and with scattered ultraminate punctures; disc of second tergum moderately shiny.

transverse microlineation less sharp, punctures close to sparse, ultraminate to minute.

Pilosity.—First tergum without apicolateral hair patch.

Color.—Blackish. The following yellow: mandible, except reddish teeth and upper margin; labrum except reddish margins; clypeus, except reddish apical margin; lateral face mark, ending on eye margin at level about midway between antennal socket and anterior ocellus; scape, except large, brownish dorsal blotch; pronotal collar, broadly interrupted in middle; pronotal lobe; tegular spot; protibia; mesotibia, except external, preapical brown blotch; basal half of metatibia and apical annulus; all tarsi. Flagellum brown above, paler beneath. Wings clear, very faintly brownish, veins and stigma brown.

Female, measurements (mm): HL 1.15; HW 1.17; WL 3.0; TL 3.7.

Head.—Moderately broad, HW $1.01 \times$ HL. Scape short, SL $0.26 \times$ HL; slender, SL $3.13 \times$ SW; first flagellar segment distinctly longer than second or third; second plus third subequal to pedicel. Eyes moderately convergent below, UFW $1.54 \times$ LFW.

Clypeus slender, CW $0.85 \times$ CL; BCW $0.62 \times$ CW, $1.31 \times$ IAD, $2.10 \times$ ASD, $1.40 \times$ COD. Frontal shield about one-third longer than greatest width, apex narrow, FSW $0.80 \times$ ASD. Interocellar distance about twice OD, distinctly greater than ocellocular distance.

Clypeus and supraclypeal area slightly shiny, appearing granulose, between close to sparse, minute to fine punctures; lateral facial area similar but punctures dense, slightly larger; frontal shield slightly shiny with subcontiguous, fine punctures on either side; face and vertex slightly shiny between subcontiguous, fine punctures; gena moderately shiny between subcontiguous to dense, fine punctures, which tend to be in rows.

Facial fovea ending about one-third of distance between eye and lateral ocellus.

Thorax.—Mesoscutum about 1.3 times wider than long; scutellum flat, about 0.4 times length of mesoscutum; metanotum flat.

Mesoscutum slightly shiny between subcontiguous to dense, fine punctures; scutellum shinier, punctures fine, subcontiguous in middle, becoming close laterad; metanotum slightly shiny between dense to close, minute punctures; mesopleuron moderately shiny between dense, minute to fine punctures; metapleuron moderately shiny between close, fine punctures. Side, disc, and stigmatal area of propodeum slightly to moderately shiny between contiguous to subcontiguous, fine punctures; basal area slightly shiny and irregularly roughened, more strongly so in middle.

Abdomen.—Disc of first tergum transversely microlineate, slightly shiny, and with a few widely scattered ultraminate punctures; disc of second tergum similar but a little shinier, microlineation less defined.

Pilosity.—First tergum without apicolateral hair patch.

Color.—Blackish. The following ferruginous: mandible; labrum; clypeus; scape; underside of flagellum; most of legs. The following yellow: narrow stripe on mandible; lateral face mark to lower end of fovea; pronotal collar, narrowly interrupted in middle; pronotal tubercle; tegular spot; incomplete stripe on protibia; basal spot on mesotibia; basal half of metatibia. Metabasitarsus yellowish white. Wings clear, slightly brownish, veins and stigma brown.

Type material: Holotype male, allotype, 2 male paratypes: cemetery, Port Royal, St. Andrew, JAMAICA, 9 Apr. 1972 (A. W. Raw); paratype male, same data, except 15 Apr. 1972; paratype male, same data, except 11 Mar. 1971. Holotype, allotype, 1 paratype in LACM; 2 paratypes in collection of A. W. Raw.

Etymology: This species is dedicated to the collector of the only known series, A. W. Raw.

Discussion: See Discussion under *H. dictyotus* below.

Hylaeus (Hylaeana) phaeoscapus New species

Figures 8–11

Diagnosis: Separable from known *Hylaeana* species by the following combined characteristics. *Male*: Supraclypeal area and entire scape dark; first tergum without apicolateral hair patch; FSW = ASD. *Female*: unknown.

Description: *Male, measurements (mm)*: HL 0.90; HW 0.93; WL 2.4; TL 2.8.

Head.—Moderately broad, HW $1.04 \times$ HL. Scape short, SL $0.22 \times$ HL; stout, SL $2.14 \times$ SW; first flagellar segment broader than long, conspicuously shorter than second or third segments, latter longer than pedicel. Eyes very strongly convergent below, UFW $2.26 \times$ LFW.

Clypeus narrow, CW $0.79 \times$ CL; BCW $0.59 \times$ CW, $1.44 \times$ ASD. $0.93 \times$ IAD, $1.30 \times$ COD. Frontal shield a little longer than greatest width, apex broad, FSW = ASD. Interocellar distance more than twice OD, distinctly greater than ocellular distance.

Clypeus slightly shiny between sparse, fine to minute punctures; supraclypeal area slightly shiny, with subcontiguous, minute punctures on either side; lateral facial area slightly shiny, with subcontiguous, fine punctures; frontal shield dull, with contiguous, fine punctures on either side of midline; face and vertex dull, contiguously and finely punctate; gena moderately shiny between subcontiguous, minute punctures.

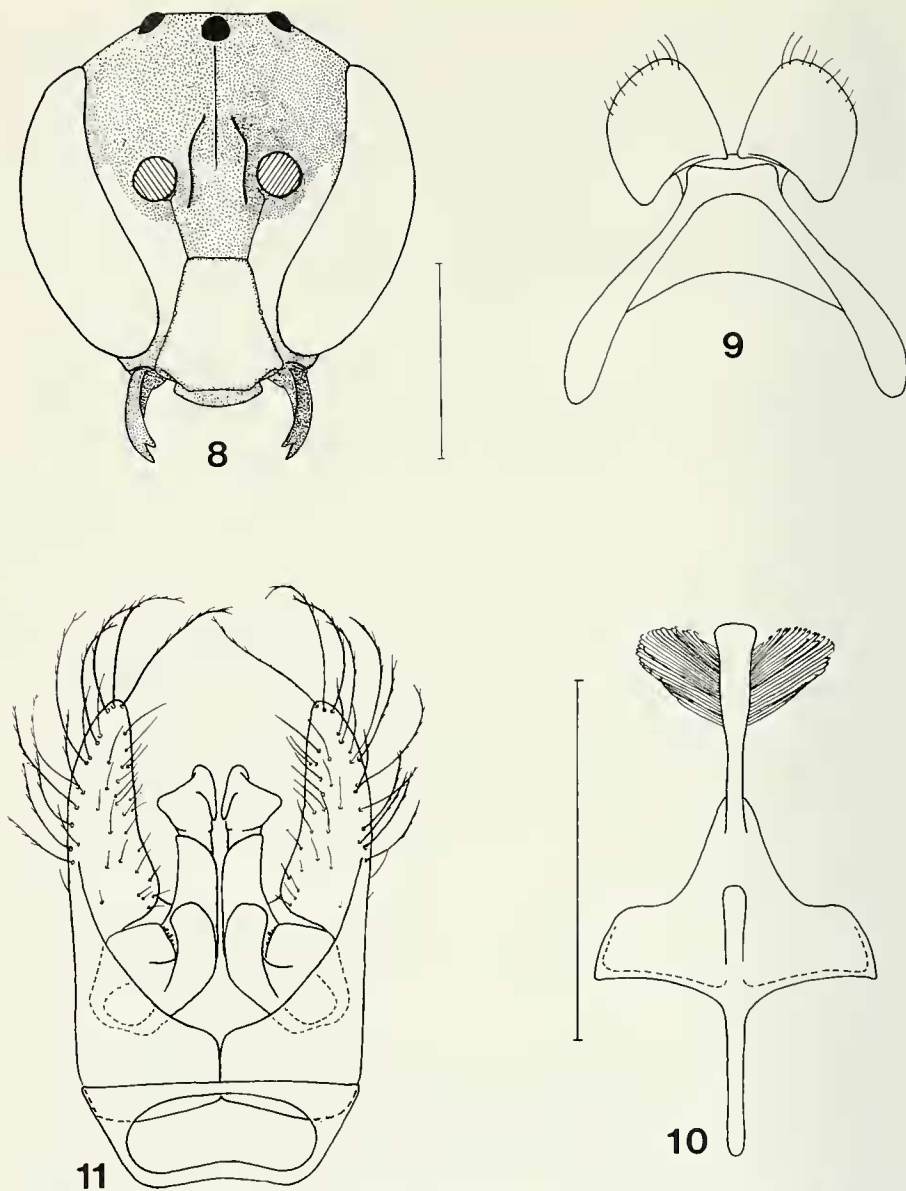
Thorax.—Mesoscutum 1.3 times wider than long; scutellum flattened, about 0.4 times length of mesoscutum; metanotum flattened. Basal face of propodeum as long as scutellum.

Mesoscutum slightly shiny between subcontiguous to dense, minute punctures; scutellum a little shinier, punctures close to sparse, minute; metanotum slightly shiny between dense to close, minute punctures; mesopluron moderately shiny between close to sparse, minute punctures; metapleuron longitudinally roughened between dense, minute punctures. Side, disc, and stigmal area of propodeum moderately shiny between close to sparse minute punctures; basal area moderately shiny, surface roughened but without rugulae.

Abdomen.—Discs of first and second terga transversely microlineate and without obvious punctures of any size, except laterad, where a few ultraminate punctures are present.

Pilosity.—First tergum without apicolateral pubescent patch.

Color.—Blackish. The following yellow: clypeus; lateral face mark to level, on eye margin, of upper margin of antennal sockets. Reddish yellow: most of protibia; basal spot and apical annulus on mesotibia; basal spot on metatibia; tarsi. Antenna brown, flagellum a little lighter beneath. Wings clear, veins and stigma brown.



Figs. 8-11. *Hylaescus (Hylaeana) phaeoscapus*, male; 8, frontal view of head; scale line = 0.50 mm. 9, sternum eight; 10, sternum nine; 11, genital capsule, ventral view; scale line = 0.25 mm.

Type material: Holotype male: Irish Town, St. Andrew, JAMAICA, 31 Jan. 1972 (A. W. Raw), in LACM.

Etymology: From Greek, *phaios* (dusky, brown) and *skapos* (stem), in allusion to the wholly brown scape.

Discussion: The type is in poor condition. The head and prolegs are detached, and the pronotum is entirely missing. The dark scape seems to be unique within

Hylaeana, and I have no doubt of the distinctness of this taxon. Other unusual features include the dark labrum, minutely punctate mesopleuron, and long basal area of the propodeum.

Hylaeus (Hylaeana) extrinsecus New species

Figure 2

Diagnosis: Separable from known *Hylaeana* species by the following combined characteristics. *Female*: Upper end of facial fovea close to inner eye margin; clypeus ferruginous; mesopleural punctures separated by more than a puncture diameter. *Male*: unknown.

Description: *Female, measurements (mm)*: HL 1.13; HW 1.17; WL 3.10; TL uncertain (probably about 3.8–4.0).

Head.—Moderately broad, HW $1.03 \times$ HL. Scape short, SL $0.24 \times$ HL; slender, SL $2.63 \times$ SW; first flagellar segment longer than second, subequal to third, which is distinctly shorter than pedicel. Eyes moderately convergent below, UFW $1.51 \times$ LFW.

Clypeus slender, CW $0.80 \times$ CL; BCW $0.73 \times$ CW, $1.60 \times$ IAD, $2.40 \times$ ASD, $1.85 \times$ COD. Frontal shield without sharp margins, about twice longer than greatest width, apex moderately narrow, FSW $0.90 \times$ ASD. Interocellar distance about twice OD, distinctly greater than ocellocular distance.

Clypeus, supraclypeal area, and adjacent side of face slightly shiny, subgranulose, between sparse, minute, obscure punctures; frontal shield with a few obscure, subcontiguous, fine punctures along each side; face dull between contiguous minute punctures (shiny within) which become subcontiguous on vertex; gena slightly to moderately shiny and finely lineate between minute, dense punctures more or less in rows.

Facial fovea ending above very close to eye margin.

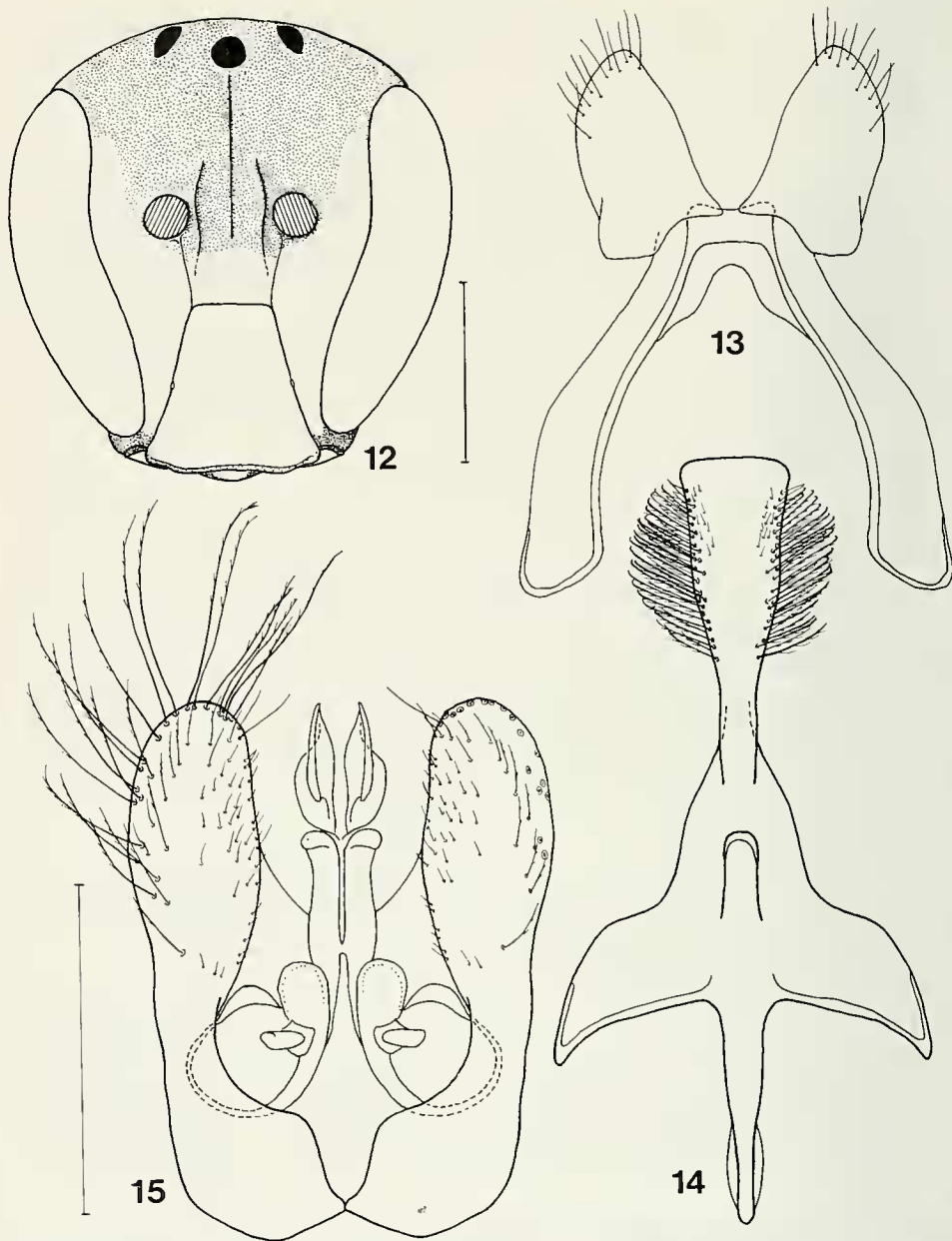
Thorax.—Mesoscutum about 1.3 times wider than long, posterior one-sixth abruptly sloping toward posterior margin; scutellum slightly flattened, about 0.3 times length of mesoscutum; metanotum flattened.

Mesoscutum slightly shiny between subcontiguous to dense, minute punctures; scutellum shinier, punctures dense to close, fine; metanotum weakly shiny between sparse, minute, obscure punctures; mesopleuron moderately shiny between close, minute punctures; metapleuron slightly shiny, irregularly and longitudinally roughened. Side of propodeum moderately shiny, finely rugosopunctate; disc similar but more coarsely roughened; stigmal area moderately reticulorugose; basal area weakly reticulorugose in front of shallow subbasal transverse impression.

Abdomen.—Missing from the one specimen available. Probably first and second terga transversely microlineate and with scattered minute or fine punctures.

Pilosity.—Shorter hairs of mesoscutum subappressed, abundant, longer than distance between them, those of posterior one-sixth directed cephalad.

Color.—Blackish. The following yellow: broad median clypeal stripe; lateral face mark to lower end of fovea; small spot on lower outer orbit; complete pronotal collar stripe; pronotal lobe; tegular spot; incomplete outer stripe on protibia; basal spot on mesotibia; basal half of metatibia. Mandible, clypeus (except median stripe), scape, underside of flagellum, most of tarsi reddish. Wings clear, slightly brownish, veins and stigma brown.



Figs. 12-15. *Hylaeus (Hylaeana) dictyotus*, male: 12, frontal view of head; scale line = 0.50 mm. 13, sternum eight; 14, sternum nine; 15, genitalic capsule ventral view; scale line = 0.25 mm.

Type material: Holotype female: Balaclava, JAMAICA (A. E. Wight), in MCZ.

Etymology: The specific name is a Latin word meaning "on the outside" and refers to the yellow spot on the lower outer orbit of the eye.

Discussion: It is unfortunate that the one available specimen lacks the gaster. By analogy with related species, TL should be 3.8-4.0 mm. The first two terga

probably will be transversely microlineate (the first more sharply so), rendering a somewhat satiny or silky luster at lower magnifications. These segments should have scattered, obscure, minute punctures.

Possibly this is the female of *H. phaeoscapus*, described above, but dissimilarities of thoracic sculpture suggest otherwise.

Hylaeus (Hylaeana) dictyotus new species

Figures 3, 12–15

Diagnosis: Separable from known *Hylaeana* species by the following combined characteristics. Basal area of propodeum moderately rugulose in middle; first tergum with apicolateral hair patch. *Male*: supraclypeal area and stripe on scape yellow; UFW less than $1.75 \times$ LFW. *Female*: facial fovea above ending very close to inner eye margin.

Description: *Male, measurements (mm)*: HL 1.12–1.32 (1.20); HW 1.08–1.27 (1.17); WL 2.5–3.0 (2.8); TL 3.4–4.6 (3.7).

Head.—Head moderately broad, HW $0.95\text{--}1.03$ (0.97) \times HL. Scape short, SL $0.20\text{--}0.24$ (0.21) \times HL; thick, SL $2.00\text{--}2.67$ (2.14) \times SW; first and second flagellar segments broader than long, each shorter than pedicel; third flagellar segment subequal to pedicel. Eyes strongly convergent below, UFW $1.51\text{--}1.76$ (1.61) \times LFW.

Clypeus slender, CW $0.79\text{--}0.86$ (0.83) \times CL; BCW $0.40\text{--}0.48$ (0.44) \times CW, $0.83\text{--}1.00$ (0.92) \times IAD, $1.22\text{--}1.60$ (1.22) \times ASD, $0.76\text{--}1.00$ (0.92) \times COD. Frontal shield about one-third longer than greatest width, apex broad, FSW $0.88\text{--}1.00$ (0.89) \times ASD. Interocellar distance about $2 \times$ OD, about equal to ocellocular distance.

Clypeus and other maculate areas slightly shiny between obscure, sparse to scattered, minute to fine punctures. Frontal shield slightly shiny and lineolate between subcontiguous fine punctures, median line impunctate. Face and preoccipital area slightly shiny between subcontiguous, fine punctures; interocellar and ocellocular areas similar but punctures dense to close; gena slightly shiny, punctures minute to fine, some elongate, subcontiguous to dense.

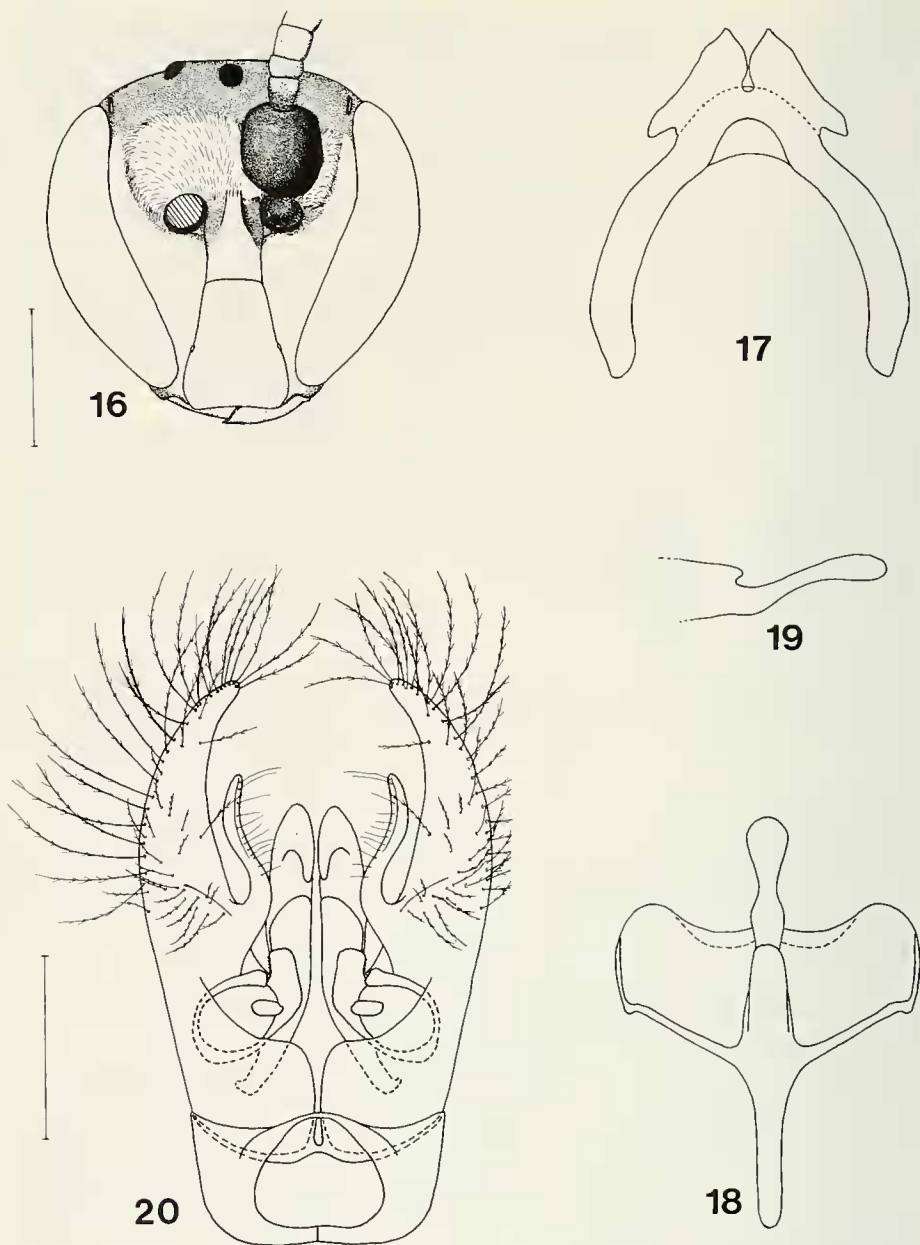
Thorax.—Mesoscutum 1.3–1.5 times broader than long; scutellum about 0.4 times length of mesoscutum, flattened; metanotum flattened.

Mesoscutum, scutellum, and metanotum slightly shiny between contiguous to subcontiguous, fine punctures; mesopleuron moderately shiny between subcontiguous to dense, fine punctures; metapleuron slightly shiny, finely rugosopunctate. Side of propodeum moderately shiny, punctures fine and irregularly spaced from contiguous to dense, becoming subcontiguous on stigmatal area and disc; basal area irregularly and moderately rugose in middle, becoming finely roughened laterad.

Abdomen.—Disc of first tergum slightly shiny, transversely microlineate, and with scattered minute punctures; disc of second tergum moderately shiny, less sharply transversely microlineate, punctures weak, ultraminate to minute, dense to sparse.

Pilosity.—First tergum with apicolateral patch of appressed white hairs.

Color.—Blackish. The following yellow: mandible, except reddish margins; large median spot on labrum; clypeus; supraclypeal area; lateral face mark, terminating on eye margin at level about midway between antennal socket and



Figs. 16–20. *Hylaenus (Gongyloprosopis) cruentus*, male: 16, frontal view of head; scale line = 0.50 mm. 17, sternum eight; 18, sternum nine; 19, profile of distal process of sternum nine; 20, genitalic capsule, ventral view; scale line = 0.25 mm.

anterior ocellus; lateral stripe on scape, extended mesad above; pronotal collar, broadly interrupted in middle; pronotal lobe; tegular spot; apical spot on all femora; outer face of pro- and mesotibia; basal half and apical annulus of metatibia. Tarsi reddish yellow except whitish meso- and metabasitarsi. Flagellum reddish

brown, paler beneath. Wings clear, very weakly brownish, veins and stigma light brown.

Female, measurements (mm): HL 1.18–1.28 (1.25); HW 1.15–1.30 (1.25); WL 2.9–3.2 (3.2); TL 3.8–4.3 (4.3).

Head.—Moderately broad, HW 0.97–1.03 (1.00) \times HL. Scape short, SL 0.24–0.27 (0.25) \times HL; slender, SL 2.67–3.25 (3.17) \times SW; first flagellar segment longer than second and third segments; third flagellar segment about half as long as pedicel. Eyes moderately convergent below, UFW 1.45–1.68 (1.50) \times LFW.

Clypeus slender, CW 0.85–0.97 (0.91) \times CL; BCW 0.56–0.62 (0.57) \times CW, 1.21–1.50 (1.31) \times IAD, 1.89–2.43 (1.89) \times ASD, 1.22–1.50 (1.42) \times COD. Frontal shield about one-third longer than greatest width, apex broad, FSW 1.00–1.29 (1.00) \times ASD. Interocellar distance about twice OD, subequal to ocellocular distance.

Clypeus and supraclypeal area slightly shiny, surface appearing granulose between very obscure, sparse to scattered, fine punctures; lateral, maculate area similar but a little more shiny; frontal shield dull between contiguous, fine punctures, except along deeply impressed midline; face and preocciput slightly shiny between contiguous to subcontiguous, fine punctures; gena slightly shiny, irregularly lineate between sparse to scattered, minute to fine punctures; punctures of vertex fine, dense to close.

Facial fovea ending above very close to inner eye margin.

Thorax.—Mesoscutum 1.3–1.4 times wider than long; scutellum flattened, about 0.4 times length of mesoscutum; metanotum flattened.

Mesoscutum slightly shiny between subcontiguous, fine punctures; scutellum similar but a little shinier; metanotum moderately shiny between subcontiguous to dense, minute to fine punctures; mesopleuron moderately shiny between subcontiguous to dense, fine punctures; metapleuron weakly shiny, finely rugoso-punctate. Side of propodeum, disc, and stigmatal area moderately shiny between contiguous to subcontiguous, fine punctures; basal area coarsely reticulorugose in center, roughened laterad, slightly shiny.

Abdomen.—Disc of first tergum with satiny luster from ultraminate transverse lineation, with scattered, obscure, ultraminate punctures; disc of second tergum similar but impunctate or with scattered, very obscure, ultraminate punctures.

Pilosity.—First tergum with apicolateral patch of appressed white hairs.

Color.—Blackish, clypeus largely suffused with reddish; mandible and labrum reddish; antenna reddish brown, flagellum paler beneath; scape paler externally. The following yellow: weak preapical clypeal spot (sometimes absent); lateral face mark, to lower end of fovea; pronotal collar, broadly interrupted in middle; pronotal lobe; tegular spot; outer stripe, incomplete, on protibia; basal half and apical annulus of metatibia; most of metabasitarsus. Mesotibia and tarsal segments reddish yellow. Wings clear, faintly brownish, veins and stigma medium brown.

Type material: Holotype male, allotype, 19 male and 13 female paratypes: Ile Royal, Iles du Salut, FRENCH GUIANA, 4 Mar. 1977 (C. D. Michener). Holotype, allotype, and most paratypes in UKAN; 5 male, 4 female paratypes in LACM.

Etymology: From Greek, *diktyotos* (reticulate or net-like), in reference to the distinctly sculptured propodeal base.

Additional material (not paratypes): *French Guiana*: 5 ♂♂, 2 ♀♀, 14 km SE Sinnamary, 7 Oct. 1976; 1 ♂, 6 ♀♀, Kourou, 28 Feb. 1977; 2 ♀♀, 7 km SW Kourou, 7 Oct. 1976 (all C. D. Michener; UKAN); 1 ♀, Montagne de Pere, Kourou, 10 Oct. 1976 (Otis, Winston, and Michener; UKAN); 1 ♀, 10 km NW Kourou, 10 Oct. 1976 (D. Roubik; UKAN); 1 ♂, Kourou, Beach NW, 21 Dec. 1976 (D. Roubik; UKAN). *Trinidad*: 1 ♂, no further locality (R. Thaxter; MCZ); 6 ♂♂, 5 ♀♀, Cumuto, 14 Feb. 1965 (J.G. Rozen; AMNH).

Discussion: The female of this species, as well as those of *H. rawi* and *H. extrinsecus* (and presumably that of *H. phaeoscapus*) will go to *H. cruentus* in the key by Moure (1960); *H. cruentus*, however, belongs to another subgenus (see below). These females differ from that of *H. cruentus* in that the sculpture of the propodeal triangle, when present, consists of fine, irregularly anastomosing rugulae. In *H. cruentus*, the propodeal triangle is crossed by a subbasal, transverse carina, anterior to which there are a few weak rugulae that define more or less quadrate areolae. Also, the first gastric tergite of *H. cruentus* is smooth and shiny between scattered minute punctures, rather than transversely microlineate as in the *Hylaeana* species.

Females of the three *Hylaeana* species described here are very similar to one another. In both *H. rawi* and *H. extrinsecus*, the basal area of the propodeum is without obvious rugulae; in *H. dictyotus*, the midbasal area is conspicuously, though finely, sculptured with a network of irregularly anastomosing rugulae, which occupy almost half the total area of the basal triangle. A distinct apicolateral patch of appressed plumose hairs is present on the first gastric tergum in *H. dictyotus*. Such a patch is not present in *H. rawi* and probably not in *H. extrinsecus*.

The females of *H. rawi* and *H. extrinsecus* are less easily separated, though the yellow mark on the lower outer orbit of *H. extrinsecus*, if consistent, would be useful. The clypeus of *H. rawi* is wholly ferruginous rather than conspicuously yellow-marked as in *H. extrinsecus*. Clypeal color is, however, unstable and should not be relied upon. The best feature to separate females of these two species would seem to be the punctuation of the frons. In *H. rawi*, the punctures are distinctly separated; in *H. extrinsecus*, they are contiguous.

Although the subgenus *Hylaeana* is not a particularly large group, no key for the species can be attempted at this time. A large proportion of the species appear to be undescribed, and until these can be included, any key would be premature.

Gongyloprosopis NEW SUBGENUS

Diagnosis: Separable from New World subgenera by the following combined characteristics. Pronotal collar without transverse crest or ridge; first and second terga shiny between fine, scattered punctures; oblique and transverse propodeal carinae absent. *Male*: Scape bulbous in frontal view (Figs. 16, 21, 25); frons with densely matted, short, plumose hairs. *Female*: Frontal shield broad above; facial fovea nearer eye than lateral ocellus.

Description: *Male*: Mandible short, broad, lower margin straight for most of its length; preapical tooth present. Labrum broader than long, with shallow median depression between low, rounded submedian ridges. Clypeus longer than broad, narrowly separated from lower end of inner eye margin. Frontal shield

reduced to a pair of short, obscure ridges between antennal sockets. Frons with dense, matted, short, plumose hairs between level of antennal sockets and anterior ocellus. Short fovea present on vertex between eye and lateral ocellus. In frontal view, scape bulbous; first flagellar segment shorter than second, both broader than long.

Pronotal collar without transverse crest or elevated ridge, lateral angles sharp in dorsal view. Lateral propodeal carina high and sharp, oblique and transverse carinae absent; basal area without rugulae behind transverse subbasal ridge, or entirely smooth (without subbasal ridge).

First and second gastric terga shiny between scattered, fine punctures; seventh tergum with distinct median emargination. Sternum eight with apical lobes oblique and simple (Fig. 17) or transverse and complex (Figs. 22, 26). Sternum nine with distal process either more or less hastiform in ventral view (Figs. 23, 27) or short and somewhat swollen at base and apex (Fig. 18). Gonocoxite, in ventral view, moderately stout, outer margin curved, apex subacute or narrowly rounded; beset with numerous long, barbate to plumose setae (Figs. 20, 24, 29).

Female: Mandible short, broad, preapical notch distinct. Labrum broader than long, with a pair of low, rounded, submedian swellings. Clypeus longer than broad, narrowly separated from lower end of inner eye margin. Frontal shield sharply marginate, apex broad. Facial fovea ending above nearer to eye margin than to lateral ocellus. Preoccipital ridge sharp, extending to gular area.

Pronotal collar without transverse crest or elevated ridge; lateral angle, in dorsal view, sharp. Lateral carina of propodeum present, oblique and transverse carinae absent; basal area irregularly vermiculorugose and with more or less distinct transverse subbasal ridge.

First and second gastric terga shiny between scattered, fine punctures. Gradulus of tergum two very faint, almost absent, pregradular area not differentiated from postgradular area.

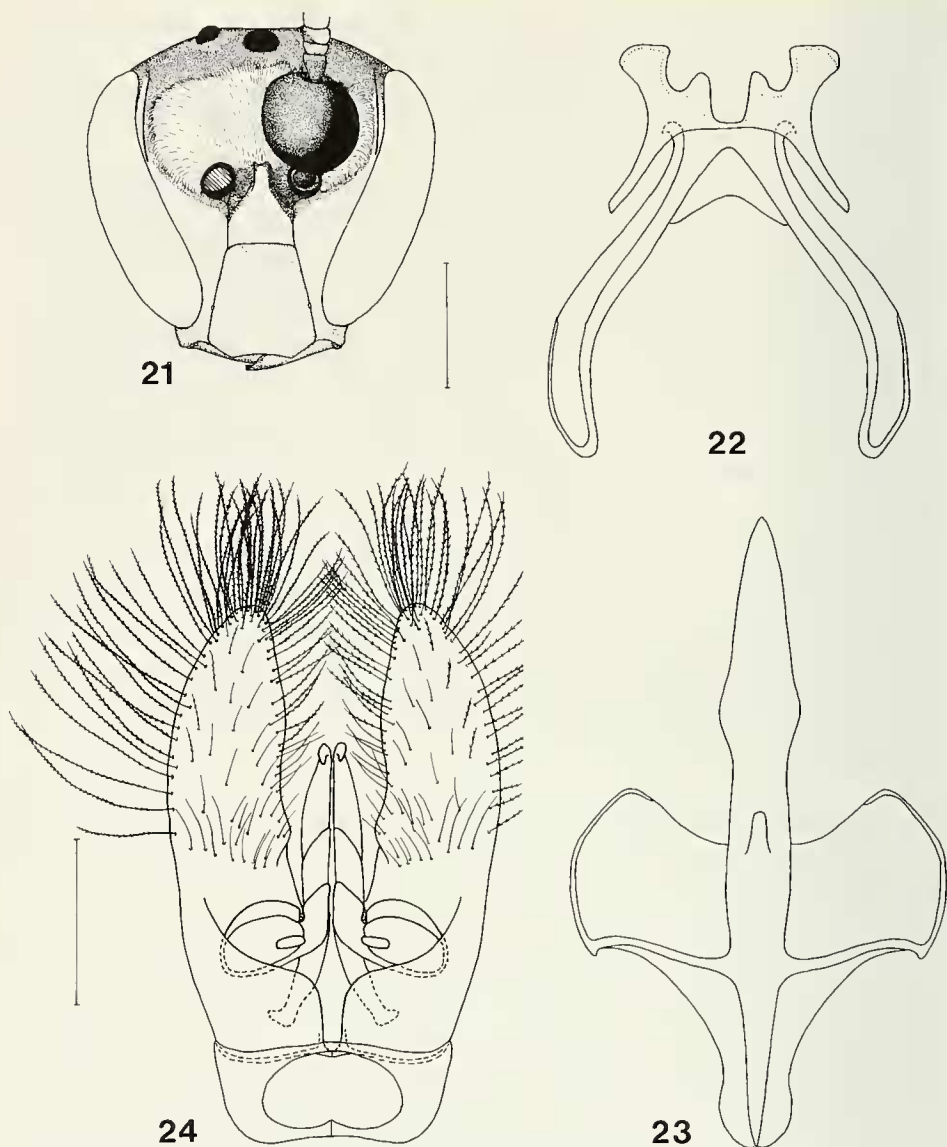
Type species: *Prosopis cruenta* Vachal, 1910.

Etymology: From Greek, *gongylos* (ball) and *Prosopis* (an old generic name for *Hylaeus*); in allusion to the shape of the male scape.

Discussion: In addition to the type species, *Gongyloprosopis* includes *H. orbicus* (Vachal) and *H. preposterosus*, described below.

Males of this subgenus are easily recognized by the greatly swollen scape and the dense mat of very short, plumose hairs covering most of the frons. In posterior view, the scape is more or less concave and with a transverse or oblique depression. In *H. cruentus*, there is a deep, reniform pit at about the middle of the posterior face and another, much smaller pit near the inner margin (Fig. 30). A small, oblique pit is present in *H. orbicus*, situated below the middle, near the inner margin (Fig. 31).

Females are, as usual in *Hylaeus*, much less readily characterized. Among the Neotropical subgenera, they may be separated by the lack of a crest on the pronotal collar and the lack of oblique and transverse propodeal carinae (unlike *Hylaeopsis*) and by the presence of a sharp lateral propodeal carina and the smooth first gastric tergum (unlike *Hylaeana*). In this sex, *Gongyloprosopis* is most like the Holarctic subgenus *Prosopis* and there is no clear distinction between the females of these subgenera.



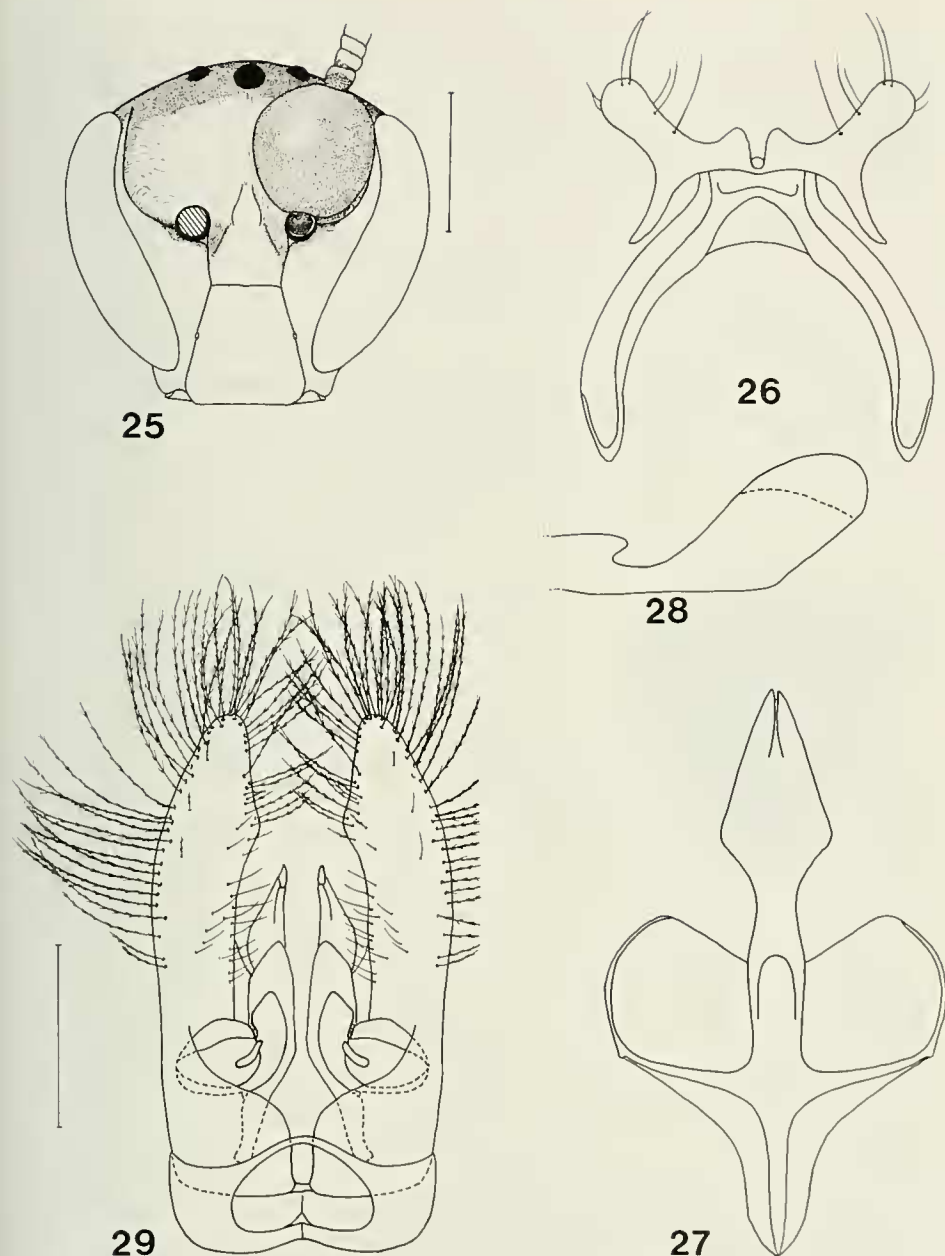
Figs. 21-24. *Hylaues (Gongyloprosopis) orbiculus*, male: 21, frontal view of head; scale line = 0.50 mm. 22, sternum eight; 23, sternum nine; 24, genital capsule, ventral view; scale line = 0.25 mm.

Hylaues (Gongyloprosopis) cruentus (Vachal)

Figures 16-20, 30, 32

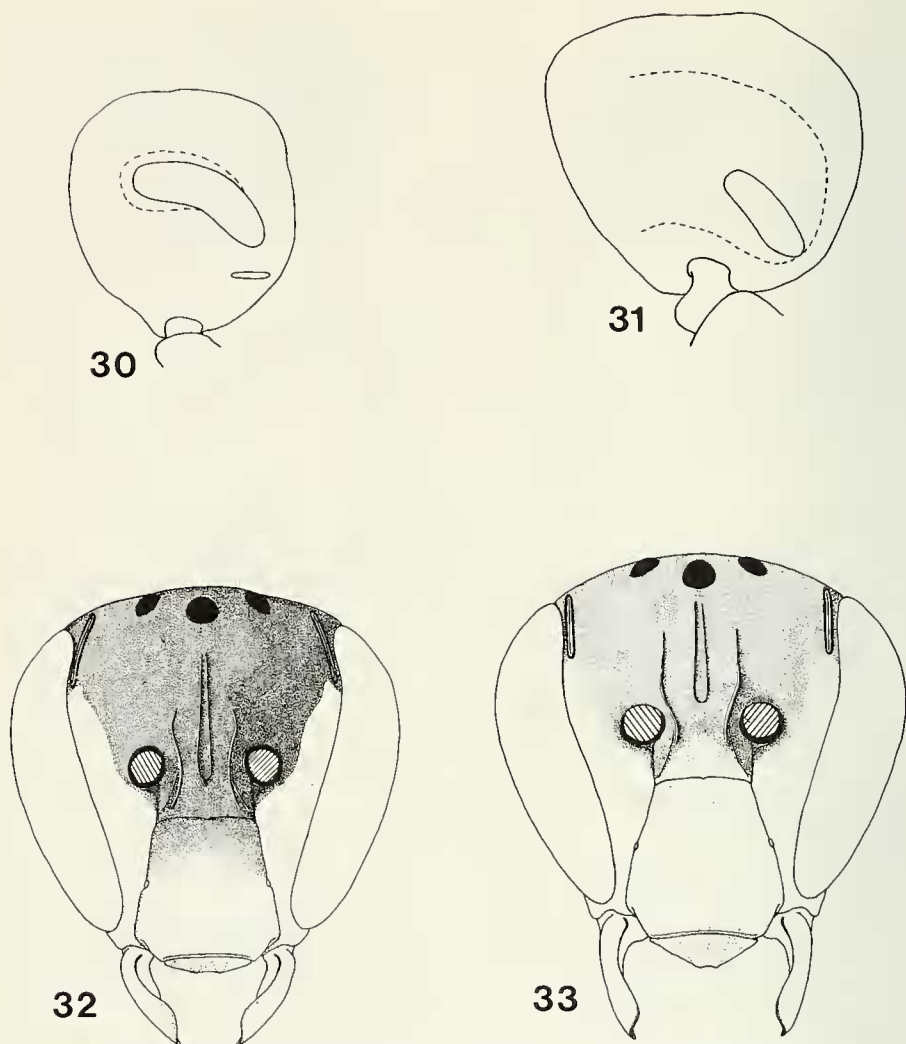
Specimens examined: *French Guiana*: 15 ♂♂, 10 ♀♀, Ile Royal, Iles du Salut, 4 Mar. 1977 (C. D. Michener; UKAN).

Discussion: *Prosopis cruenta* was based on a single female from an unknown locality in British Guiana (Guyana). Moure (1960) redescribed the type, which is in the Paris Museum. The females I have seen agree closely with that redescip-



Figs. 25–29. *Hylaeus (Gongyloprosopis) preposterus*, male: 25, frontal view of head; scale line = 0.50 mm. 26, sternum eight; 27, sternum nine; 28, profile of distal process of sternum nine; 29, genitalic capsule, ventral view; scale line = 0.25 mm.

tion. The amount of ferruginous on the clypeus is variable: in some specimens, the clypeus is almost wholly reddish and, in others, it is largely blackish. The first gastric tergum is mostly bright ferruginous but with considerable blackish along the posterior margin and in the middle. Sublateral patches of appressed



Figs. 30-33. *Hylaenus* (*Gongyloprosopis*) spp. 30, posterior view of male scape, *H. cruentus*; 31, same, *H. orbicus*. 32, frontal view of female head, *H. cruentus*; 33, same, *H. preposterousus*.

white hairs are present on the apical margins of the first and second gastric terga, though worn off in some specimens (including the type).

Although Moure (1960) thought that *H. cruentus* might prove to be the female of *H. orbicus*, the males here associated with the *H. cruentus* females are clearly distinct from *H. orbicus*. The association is based largely on the similarity in the sculpture of the basal area of the propodeum. These males also differ from those of *H. orbicus* in the less swollen scape, the entirely yellow clypeus, and the distinctive genitalic structure.

In the males here presumed to be those of *H. cruentus*, there is a peculiar, inner, ventral process arising near the base of the gonocoxite (Fig. 20). This structure is unique among the Neotropical *Hylaenus* I have studied. The form of

the genitalia and associated structures is very different from that of the other two species here placed in *Gongyloprosopis*. The temptation to propose another subgenus for *H. orbicus* and *H. preposterosus* is strong, but there are so many other similarities among these three species that they are best left together for the present. When the Neotropical *Hylaeus* are better known, this conclusion can be reconsidered if necessary.

Hylaeus (Gongyloprosopis) orbicus (Vachal)

Figures 21–24, 31

Specimens examined: *French Guiana*: 3 ♂♂, Ile Royal, Iles du Salut, 4 Mar. 1977 (C. D. Michener; UKAN).

Discussion: This species was based on a single male from an unknown locality in British Guiana (Guyana). The type is in the Paris Museum and was redescribed by Moure (1960). The three specimens I examined agree well with Moure's redescription except that in two there is no yellow on the clypeus. Instead, a broad median area is very light ferruginous.

The female is unknown but probably is very similar to that of *H. cruentus*. The basal area of the propodeum might differ from that of *H. cruentus* in lacking a distinct subbasal ridge.

Hylaeus (Gongyloprosopis) preposterosus new species

Figures 25–29, 33

Diagnosis: Separable from *H. cruentus* and *H. orbicus* by the following combined characteristics. *Male*: Face marks whitish; scape brown; basal area of propodeum roughened behind transverse subbasal ridge; first and second terga with apicolateral hair patches; sternum eight with setae. *Female*: Lateral face marks pale yellowish; metanotal punctures close; apicolateral hair patch of third tergum as dense as that of second.

Description: *Male, measurements (mm)*: HL 1.35; HW 1.36; WL 3.5; TL 3.1.

Head.—Moderately broad, HW $1.01 \times$ HL. Scape short, SL $0.36 \times$ HL, bulbous in frontal view, SL $1.03 \times$ SW; first two flagellar segments transverse, subequal in length, third segment slightly broader than long. Eyes very strongly convergent below, UFW $1.80 \times$ LFW.

Clypeus narrow, CW $0.86 \times$ CL; BCW $0.60 \times$ CW, $1.15 \times$ IAD, $1.50 \times$ ASD, $1.07 \times$ COD. Frontal shield very short, consisting of a pair of weakly bowed, subparallel ridges between antennal sockets, apex narrow, FSW $0.40 \times$ ASD. Interocellar and ocellocular distances subequal, about $2 \times$ OD.

Punctures of clypeus, supraclypeal area, and paraocular area fine, dense to close on clypeus and supraclypeal area, close to sparse on paraocular area, interspaces slightly shiny. Front face of scape with sparse, fine punctures. Gena slightly shiny and microlincolate between somewhat elongate, dense punctures.

Thorax.—Mesoscutum about 1.4 times wider than long; scutellum flattened, about 0.4 times length of mesoscutum; metanotum flattened.

Mesoscutum slightly shiny between fine, subcontiguous to dense punctures; scutellum similar, but punctures more separated in center; metanotum slightly shiny between fine, contiguous punctures; mesopleuron slightly shiny, punctures fine, contiguous to subcontiguous; metapleuron dull, finely rugosopunctate. Side of propodeum slightly shiny, finely rugosopunctate; stigmal area and disc similar

but moderately rugosopunctate; basal area with a thin transverse subbasal ridge, anterior to which are a number of coarse, irregular areolae; behind subbasal ridge, a few irregular rugulae and areolae.

Abdomen.—Disc of first tergum shiny between sparse to scattered, fine, and interspersed minute, punctures; disc of second tergum less shiny, obscurely lineolate between sparse, minute punctures.

Pilosity.—First two gastric terga with apicolateral patches of appressed white hair.

Color.—Blackish. The following whitish: large inverted triangle on clypeus; supraclypeal area; paraocular area, including narrow extension along inner orbit to top of eye; narrow line on either side of pronotal collar; margin of pronotal lobe. The following ferruginous: mandible; labrum; malar area; clypeus, except as noted above; flagellum, darker above; tibiae, except dark irregular blotches; tarsi; tegula. Scape brown. Wings strongly transparent brownish; veins and stigma dark brown. First gastric tergum bright ferruginous with brownish margin in middle.

Female, measurements (mm): HL 1.32–1.43 (1.43); HW 1.38–1.50 (1.50); WL 3.3–3.7 (3.7); TL 4.4–4.8 (4.8).

Head.—Moderately broad, HW $1.05 \times$ HL. Scape moderately long, SL $0.30\text{--}0.36$ (0.36) \times HL; slender, SL about $4 \times$ SW; first three flagellar segments subequal in length, each shorter than pedicel. Eyes moderately convergent below, UFW $1.54\text{--}1.58$ (1.54) \times LFW.

Clypeus slender, CW $0.86\text{--}0.87$ (0.86) \times CL; BCW $0.69\text{--}0.71$ (0.69) \times CW, $1.29\text{--}1.33$ (1.29) \times IAD, $2.22\text{--}2.44$ (2.44) \times ASD, $1.66\text{--}1.69$ (1.69) \times COD. Frontal shield about one-third longer than greatest width, apex broad, FSW $1.56\text{--}1.89$ (1.89) \times ASD. Interocellar distance less than twice OD, subequal to ocellular distance.

Clypeus, supraclypeal area and paraocular area slightly shiny between close, minute punctures; frontal shield with fine, longitudinal rugulae separated by rows of fine to moderate punctures, which are shiny within; frons slightly shiny between fine, subcontiguous punctures; vertex similar but duller, punctures becoming less distinct on preocciput; gena slightly shiny, finely lineolate between dense to close, fine punctures.

Facial fovea ending above about one-fourth of distance between eye and lateral ocellus.

Thorax.—Mesoscutum 1.3–1.4 times wider than long; scutellum flat, about 0.4 times length of mesoscutum; metanotum weakly convex.

Mesoscutum slightly shiny, punctures fine, subcontiguous at sides, becoming dense to close in posteromedian area, punctures obscured by distinct transverse lineation; scutellum slightly shinier, lineation less sharp, punctures fine, dense to close; metanotum dull, with subcontiguous minute to fine punctures; mesopleuron dull, appearing almost granulose, between fine to moderate, subcontiguous to dense punctures; metapleuron and side of propodeum weakly shiny, finely to moderately rugosopunctate; stigmatal area and propodeal disc moderately rugosopunctate; basal area as in male.

Abdomen.—Disc of first tergum shiny, polished between minute, sparse to scattered punctures; disc of second tergum shiny, slightly roughened, between scattered, ultraminate punctures.

Pilosity.—First three terga with apicolateral patches of appressed white hairs.

Color.—Blackish. The following pale yellowish: lateral face mark, ending broadly at lower end of fovea; dorsal stripe on either side of pronotal collar; much of pronotal lobe; tegular spot; basal spot on each tibia. The following ferruginous: mandible; labrum; malar area; all or most of clypeus. First gastric tergum bright ferruginous. Dull ferruginous mark present or absent on supraclypeal area. Antenna reddish brown, lighter beneath; legs light reddish brown with irregular darker blotches on femora and tibiae. Wings as in male.

Type material: Holotype male: 20 km W Laranjeiras, Dept. Beni, BOLIVIA, 3–5 Aug. 1954 (J. K. Bouseman and J. Lussenhop). Allotype: Rio Itenez, Pampa de Meio, Dept. Beni, BOLIVIA, 11–13 Sept. 1954 (J. K. Bouseman and J. Lussenhop). Paratype female: Rio Itenez at mouth of Rio Baures, Dept. Beni, BOLIVIA, 30 Sept. 1954 (J. K. Bouseman). Holotype and allotype in AMNH, paratype in LACM.

Etymology: From Latin, *praeposterus* (absurd).

Discussion: The male of this species is similar to that of *H. cruentus* in propodeal structure, but its genitalic features are more like those of *H. orbicus*, with which it also agrees in having a partially ferruginous clypeus. The maculate portion of the upper inner orbit is elevated and visible in lateral view; its inner margin is abrupt and extends as a sharply cariniform ridge which turns mesad to the lower margin of the antennal socket. A raised cariniform ridge is present also in male *H. orbicus* but is parallel with the inner eye margin and fades away at about the level of the lower margin of the antennal socket.

The female of *H. preposterus* is very similar to that of *H. cruentus*. In *H. cruentus* females, the punctures of the frons, above the frontal shield, are not in definite rows separated by fine ridges, and the metanotal punctures are sparse to scattered. The metapleuron and side of the propodeum in *H. cruentus* have numerous very short, plumose, subappressed hairs, which do not conceal the surface. In *H. preposterus*, the hairs are longer and denser so that the surface is partially obscured.

The following key will separate those species currently placed in *Gongyloprotopis*.

- | | |
|---|--------------------|
| 1a. Antenna 12-segmented (female) | 2 |
| b. Antenna 13-segmented (male) | 3 |
| 2a. Punctures of frontal shield and middle of frons in rows separated by fine, raised, subparallel ridges; metanotal punctures subcontiguous; integument of side of propodeum partially concealed by subappressed plumose pubescence | <i>preposterus</i> |
| b. Punctures of frontal shield and middle of frons irregularly spaced and not separated by distinct raised ridges; metanotal punctures sparse to scattered; side of propodeum with very short, subappressed, plumose hairs, which do not conceal integument | <i>cruentus</i> |
| 3a. Basal triangle of propodeum with transverse subbasal ridge, behind which surface is finely and irregularly rugulose | 4 |
| b. Basal triangle without transverse subbasal ridge and without network of fine rugulae | <i>orbicus</i> |
| 4a. Clypeus entirely yellow; scape width 0.33–0.35 times face width at level of ocular situation; gonocoxite with digitiform ventral process .. | <i>cruentus</i> |

- b. Clypeus partially ferruginous; scape width 0.47 times face width at level of ocular sinuation; gonocoxite without digitiform ventral process
 *preposterosus*

Acknowledgments

I am very much indebted to D. C. Rentz, who loaned the types of Cresson's Neotropical species, thus enabling me to settle some important questions regarding the status of these species. Notes on the F. Smith types were generously provided by I. H. H. Yarrow.

A. W. Raw sent material from his Jamaican collection. Institutional specimens were sent by H. E. Evans (MCZ), C. D. Michener (UKAN) and J. G. Rozen, Jr. (AMNH).

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Natural History Museum of Los Angeles County, Section of Entomology, 900 Exposition Blvd., Los Angeles, California 90007.